REMARKS

Claims 1-14 are pending. The independent claims are claims 1, 5, 13, and 14. Applicant respectfully requests reconsideration and allowance of these claims, in addition to the claims depending therefrom. All claims are rejected on new grounds. Those new grounds are obviousness under 35 USC 103(a), in view of *Yu* (U.S. Patent No. 6,307,901) and *Olivier* (U.S. Patent No. 6,512,802). *Yu* is a new reference, and was filed on 24 April 2000. The *Zhang* reference is withdrawn by the Examiner and the reference *Yu* reference is presented instead. *Olivier* was presented in the previous Office Action.

Yu discloses a turbo decoder with decision feedback equalization. The decoder performs a decision-feedback equalization in each iteration of the turbo encoding process. In the iteration process two recursion processors calculate soft output values for the information bits and the coded bits of the signal. Hard output values are derived from the soft output values. A decision feedback equalizer in an iterative loop of the decoder receives the hard output values and uses these to provide a correction for the intersymbol interference. Thereafter, the decision feedback signal applies the correction signal to the input signal to minimize the intersymbol interference.

According to the flow diagram of *Yu's* Fig. 7 the decoding is performed as follows. Received samples for a whole frame are buffered and the number of iterations is set to N_0. On the basis of the buffered samples equalized samples are calculated. These equalized samples are input to the turbo decoder, which calculates hard decisions of information bits and parity bits. Then, it is examined whether the predetermined number of iterations has been performed. If not, intersymbol interference equalization coefficients are updated on the basis of the hard decision values. In a next step the equalization coefficients are applied to multiplexed and interleaved hard decision values to provide an intersymbol interference compensation correction signal. The intersymbol interference of the input signal is equalized using the correction signal and combined with the input to minimize the intersymbol interference.

In Section 2 of the Office Action it is stated that *Yu* teaches all the features of claim 1 except that the signal contains symbols formed of binary information by phase shift keying.

On page 2, in the middle of section 2, the Office Action refers to element 58 of fig. 3 and col. 4, line 13. Applicant respectfully submits that this is not correct. *Yu* does not have the element 58 (samples are taken...). Applicant respectfully requests clarification.

Furthermore, the decision step of *Yu* (for deciding whether a new iteration is performed or not) is different from the present invention. In the present invention, the stabilization of the equalizer is used in deciding whether further iterations are needed or not. However, the Examiner states that it is obvious to modify the decision step of *Yu* in view of *Olivier* to determine whether the number of iterations completed equals the predetermined iteration. Applicant respectfully disagrees. In the present invention, the number of iterations may vary from time to time so there is no predetermined number of iterations in the present invention. This is now more clearly stated in the amended independent claims, which are fully supported by the specification and introduce no new matter (the claims are also amended merely to place them in a better format).

The Office Action also states that *Yu* teaches adding noise before taking the decision step. However, Applicant is unable to find such a statement in *Yu*, so clarification is requested.

CONCLUSION

Therefore, the rejections of the Official Action of September 14, 2005, having been shown to be inapplicable, withdrawal thereof is requested, and passage of claims 1-14 is earnestly solicited.

Respectfully submitted,

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